ARI Research Note 91-60

User's Manual for CREATJRTC

Jack D. Baldwin
BDM International, Inc.

for

Contracting Officer's Representative
Michael R. McCluskey

Field Unit at Presidio of Monterey
Howard H. McFann, Chief

Training Research Laboratory
Jack H. Hiller, Director

June 1991

United States Army
Research Institute for the Behavioral and Social Sciences

U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES

A Field Operating Agency Under the Jurisdiction of the Deputy Chief of Staff for Personnel

EDGAR M. JOHNSON
Technical Director

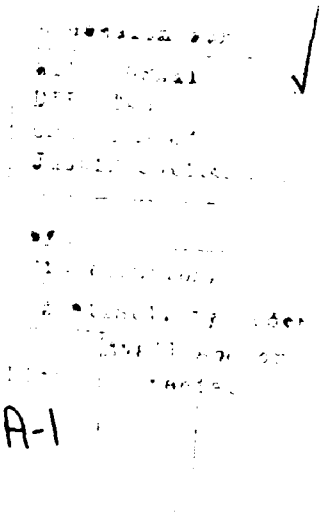
JON W. BLADES
COL, IN
Commanding

Research accomplished under contract
for the Department of the Army

BDM International, Inc.

Technical review by

Richard Crenshaw
Donald Wolff



UNCLASSIFIED
SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION Unclassified	1b. RESTRICTIVE MARKINGS --
2a. SECURITY CLASSIFICATION AUTHORITY --	3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution is unlimited.
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE --	
4. PERFORMING ORGANIZATION REPORT NUMBER(S) BDM/ARI-TR-0018-90	5. MONITORING ORGANIZATION REPORT NUMBER(S) ARI Research Note 91-60
6a. NAME OF PERFORMING ORGANIZATION BDM International, Inc. 6b. OFFICE SYMBOL (If applicable) --	7a. NAME OF MONITORING ORGANIZATION U.S. Army Research Institute
6c. ADDRESS (City, State, and ZIP Code) 2600 Garden Road, North Building Monterey, CA 93940	7b. ADDRESS (City, State, and ZIP Code) Presidio of Monterey Field Unit P.O. Box 5787 Presidio of Monterey, CA 93944-5011
8a. NAME OF FUNDING/SPONSORING ORGANIZATION U.S. Army Research Institute for the Behavioral and Social Sciences 8b. OFFICE SYMBOL (If applicable) PERI-I	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER DABT56-88-C-0016
8c. ADDRESS (City, State, and ZIP Code) 5001 Eisenhower Avenue Alexandria, VA 22333-5600	10. SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO. 63007A; PROJECT NO. 794; TASK NO. 3402; WORK UNIT ACCESSION NO. C5
11. TITLE (Include Security Classification) User's Manual for CREATJRTC	
12. PERSONAL AUTHOR(S) Baldwin, Jack D.	
13a. TYPE OF REPORT Final 13b. TIME COVERED FROM 90/08 TO N/A	14. DATE OF REPORT (Year, Month, Day) 1991, June 15. PAGE COUNT 11
16. SUPPLEMENTARY NOTATION Michael R. McCluskey, Contracting Officer's Representative	
17. COSATI CODES FIELD / GROUP / SUB-GROUP	18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number) Joint Readiness Training Center (NTC) VMS Relational database INGRES

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

This document is a User's Guide intended for use by a database administrator responsible for creating mission databases using data collected at the Joint Readiness Training Center, Fort Chafee, AR.

The software is suitable for use on a Digital Equipment Corporation VAX computer as configured at the Presidio of Monterey Field Unit of the U.S. Army Research Institute for the Behavioral and Social Sciences. It is intended for use at the ARI Presidio of Monterey Field Unit only.

20. DISTRIBUTION/AVAILABILITY OF ABSTRACT ☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT. ☐ DTIC USERS	21. ABSTRACT SECURITY CLASSIFICATION Unclassified
22a. NAME OF RESPONSIBLE INDIVIDUAL Howard H. McFann	22b. TELEPHONE (Include Area Code) (408) 647-5316 22c. OFFICE SYMBOL PERI-IO

DD Form 1473, JUN 86 *Previous editions are obsolete.* SECURITY CLASSIFICATION OF THIS PAGE
UNCLASSIFIED

FOREWORD

This report illustrates use of the mission databases derived from data collected at the National Training Center (NTC), Fort Irwin, CA. It acquaints the researcher with the structure of the research database schema and the relationships between the tables contained therein.

The research described in this report was conducted by resident contract personnel at the Presidio of Monterey Field Unit (ARI-POM) of the U.S. Army Research Institute for the Behavioral and Social Sciences. ARI-POM's mission is to conduct research on unit training and performance at the Army's Advanced Collective Training Centers, such as the NTC. The research task that supports this mission is titled "Design Enhancements to CTC Digital Database and Analysis System."

USER'S MANUAL FOR CREATJRTC

CONTENTS

LIST OF FIGURES

User's Manual for CREATJRTC
VERSION 1.0

1. General.

1.1 Purpose of User's Manual.

The objective of the User's Manual for CREATJRTC is to provide the information necessary for the user to effectively use the automated information system to create mission databases derived from the Joint Readiness Training Center I-MILES data.

1.2 Project references.

Baldwin, J. D. (1990, August). *User's Guide to the ARI-JRTC Mission Database*. (Research Note BDM/ARI-TR-0018-90) Presidio of Monterey, Ca: U. S. Army Research Institute Field Unit.

1.3 Terms and Abbreviations.

DBA	Database Administrator.
DBMS	Database Management System is software that provides for easy access to data by non-programmers.
INGRES	Software product of INGRES Inc. It is the DBMS that ARI-POM is currently using to store the mission databases.
PC	Personal Computer from the INTEL family of microprocessors with the Microsoft Corp. Disk Operating System (DOS)
QUEL	QUEry Language used by the INGRES DBMS software.
VAX	Virtual Address eXtended. This is the name used by the Digital Equipment Corporation for their family of computing machines.
VMS	Virtual Memory System. This is the name used by the Digital Equipment Corporation for their operating system used with the VAX family of computers.

1.4 Security.

This program shall be available to the database administrator for use at his/her discretion. Knowledge of the USER account and PASSWORD will limit its use to those certified by the DBA.

2. System summary.

2.1 System overview.

This program is intended to create a mission database using the I-MILES data collected at the JRTC. It will be run interactively by the database administrator to create a single database per execution of the program.

ENCL 7

2.2 System operation.

CREATJRTC has four sources of inputs. They are: a) the event data file (rotation.dat), b) the player file (either the player.dat or the rotation.pid files), c) the weapon type file (system.dat), and d) user input derived from the JRTC Take Home Package. The output from CREATJRTC is a mission database on the VAX computer. Data is pre-processed on a personal computer prior to uploading to the VAX system.

2.3 System configuration.

This software is designed to operate on any of the Digital Equipment Corp. family of VAX computers running under VMS and having INGRES DBMS installed. Data is transferred from a DOS machine (IBM compatible PC) to the VAX using KERMIT or XMODEM and then processed on the VAX into a mission database (see Figure 1).

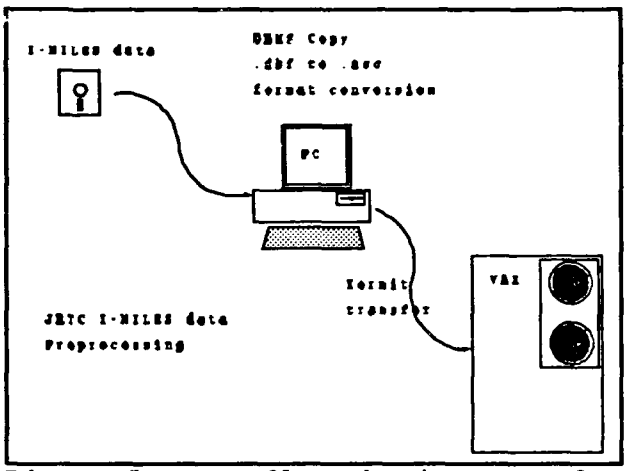


Figure 1. Data flow showing transfer of data from floppy disk to VAX.

2.4 System organization.

The software organization of CREATJRTC is FORTRAN (v. 77) with embedded QUEL statements. The program uses the embedded QUEL statements to interface with the INGRES (v. 6.3) database structures.

2.5 System performance.

CREATJRTC is an interactive program. The time it takes to create a mission database is dependent on the volume of data to be converted to the INGRES subsystem. An average time for a JRTC phase will be approximately 15 minutes. At this rate, a JRTC rotation can be loaded in less than a single day.

2.6 Contingencies and alternate modes of operation.

No provision for alternate modes of operation is provided.

2.7 Database/data bank.

CREATJRTC uses an INGRES database, ARIDMS, to record information about the databases it has created or will create. The MISSION table is the receptacle of this data. The following is a description of this table and the columns that are entered by CREATJRTC:

Name:	mission
Owner:	tacdb
Location:	db_ingres
Type:	user table
Row width:	89
Storage structure:	heap

column name	type	length	key sequence
mstart	c	20	
mend	c	20	
mhistory	c	6	
msegment	integer	1	
mtype	c	10	
morg	c	15	
mtf	c	1	
mdbname	c	12	

2.8 General description of inputs, processing, outputs.

Inputs: As stated in section 2.2, there are four sources of input for CREATJRTC. The primary source for inputs to the program is the JRTC Take Home Package.

a) JRTC Phase start date - date / time of the phase start time, found in the Take Home Package. This is usually the event of issuing the OPORD. This field must be manually entered by the database administrator.

b) JRTC Phase end time - date / time of the phase end time, found in the Take Home Package. This is usually the event labeled as 'Change of Mission'. This field must be manually entered by the DBA.

c) JRTC Rotation - the rotation number as recorded on the Take Home Package. This is a four digit number entered by the DBA.

d) JRTC Phase (1 - 5) - the mission phase as reported in the Take Home Package. This must be manually entered by the DBA.

e) JRTC Iteration - the sequence number of the scenario being trained for. This is implied by the number of times a particular mission is conducted during a rotation. This information is derived by the DBA and manually entered into the program.

f) JRTC mission type - mission as reported in the Take Home Package. Program will only accept standard mission types as defined by the data input screen edits. (i.e. D ATK for deliberate attack, DEF BP for defend battle position, etc.). This must be manually entered by the DBA.

g) Organization of Participants - those units that are at the JRTC training. This information is found on the cover sheet of the Take Home Package. Program will search for this and try to fill this field during the execution of the program.

h) Mission battalion / task force - L(ight) forces

In addition to inputs from the THP, the program constructs the database name from the above fields (c,d,e and h) and uses this name to search the MISSION table of ARIDMS to see if this database already exists. If it does, the program will not allow the creation of two databases with the same name. A message to this effect is displayed on the terminal to notify the DBA.

Processing: CREATJRTC places an entry in the MISSION table of ARIDMS and then proceeds with the creation of the database.

Output: The MISSION table of ARIDMS has a row appended to it, as described in 2.7 above. All columns are updated by the program except for 'org', which is not known until the database is created.

3. Functions related to technical operations.

3.1 Initiation procedures.

In order to process the I-Miles data from the JRTC, it first must be converted from the DBASE III format to an ASCII format. This should be accomplished on the PC using the DBMSCOPY software for DBASE III files to ASCII (this is an option of DBMSCOPY when you install it on your hard disk drive). The general syntax of the command is as follows:

```
C:\DBMSCOPY>DBMSCOPY a:9003.dbf [fixed]a:9003.ascii
C:\DBMSCOPY>DBMSCOPY a:player.dbf [fixed]a:player.ascii
C:\DBMSCOPY>DBMSCOPY a:9003.pid [fixed]a:pid.ascii
C:\DBMSCOPY>DBMSCOPY a:system.dbf [fixed]system.ascii
```

The first file, rotation.dbf, is required and either of the second or third files may be used (player.dbf is recommended). The fourth file, system.dbf, is a static file and need not be converted with each rotation unless it has changed at the JRTC. When these files have been converted to an ASCII format, they may be uploaded to the VAX system into the disk area **DUA1:[tacdb2.jrtc.rotation]**. Either Kermit or XModem may be used to transfer the files from a PC to the VAX computer system.

3.2 Input requirements.

It is necessary for the DBA to have the JRTC Take Home Package at the time the databases are created. This is necessary for the input requirements to the program as most of these data are contained within the THP.

3.2.1 Input formats.

The following are the formats needed for input to CREATJRTC:

JRTC Phase start date:	valid date - time format as follows: dd-Mmm-yy hh:mm:ss.
JRTC Phase end date:	same as Mission start date above.
JRTC Rotation:	JRTC assigned rotation specified with the following format: YYRR where YY Fiscal year as 90, 91 etc. RR Rotation sequence number, from 01 to 14.
JRTC Phase:	Training exercise sequence number from 1 to 5.
JRTC Iteration:	Training scenario sequence number.
JRTC Mission type:	any one of the following: D ATK, H ATK, C ATK, DEF SEC, DEF BP, RECON, MTC.
Battalion / task force:	I(nfantry)

3.2.2 Composition rules.

See 3.2.1 Input formats above for any composition rules.

3.2.3 Input vocabulary.

See 3.2.1 Input formats above for input vocabulary.

3.2.4 Sample inputs.

Figure 2 is an example of the data entry screen for entering JRTC data from the Take Home Package. The example uses the 9003 rotation for its input data. This is the only screen that need be entered by the Data Base Administrator.

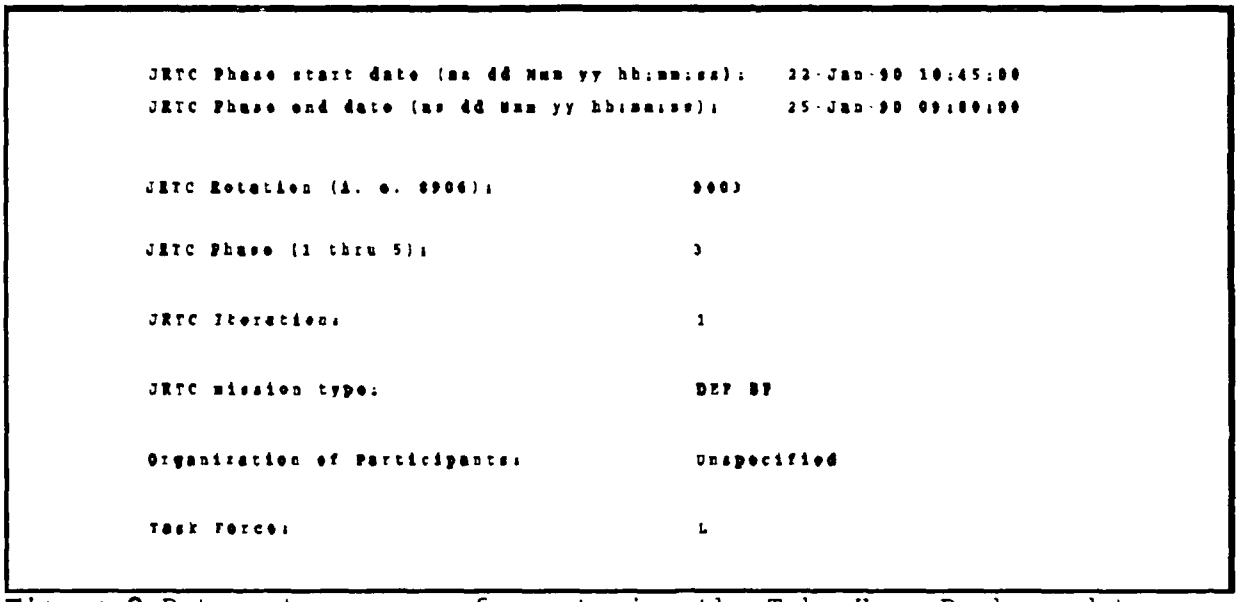


Figure 2 Data entry screen for entering the Take Home Package data.

3.3 Output requirements.

An entry is made in a parameter database, ARIDMS, that helps the system in the building of the database and for system maintenance of the mission database sets. This entry is used to determine if a database already exists, and to help categorize the data within the mission database.

3.3.1 Output formats.

The output is a record in the MISSION table of the ARIDMS database. The columns of the MISSION table of the ARIDMS database are the same as those outlined in Section 3.2.1 Input formats, above.

3.3.2 Sample outputs.

A sample row of data from the MISSION table looks like this:

mstart	mend	mhisto	mseg	mtype	mcrg	mtf	airpl	gndpl	mdbname
02-Dec-89 03:19:53	02-Dec-89 05:15:16	9003	1	RECON		L	0	0	J903L_02

3.3.3 Output vocabulary.

No discussion of output is needed for this program.

3.4 Utilization of system outputs.

No discussion of the utilization of the system outputs is provided.

3.5 Recovery and error correction procedures.

Should the program fail to construct a complete database, it is necessary to destroy the database as well as remove the entry in the MISSION table of the ARIDMS database. Once this is done, you may rerun the CREATJRTC program to construct the mission database again.